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ABSTRACT

6 An open, liquid-state electrochemical cell that can be used as a primary or rechargeable power source for various miniaturized or portable electronic devices. The cell is composed of flexible and thin layers of anode, cathode and electrolyte materials with the electrolyte layer being exposed to open air. The electrolyte with an open configuration avoids the accumulation of gases upon storage of the cell. The electrolyte includes (a) a deliquescent material for keeping the open cell wet at all times and (b) an ion conductive material for transporting ions across the electrolyte layer. The electrolyte does not include a water-soluble polymer. The invention also provides a multi-cell battery that contains cells exhibiting the above-described features. The cell or battery, along with an electronic component, may be attached to a flexible substrate to make a functional device.

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